Two Problems For 2002

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Listed below are two numerical activities that can be used to challenge your students near the end of the year 2001 or the beginning of the year 2002. In keeping with the spirit of Ohio's Model Competency-based Mathematics Program and the NCTM Standards, provide your students with a 2002 problem solving opportunity - working either individually or in groups. Ask them to communicate their work orally and/or in writing.

1. 2002--It's Sum Year.

a.) One way to write 2002 as a sum of consecutive positive integers is
2002 = 283 + 284 + 285 + 286 + 287 + 288 + 289.

There are six other ways that 2002 can be written as a sum of consecutive positive integers. How many can you find?

b.) One way to write 2002 as a sum of consecutive positive even integers is
2002 = 1000 + 1002.

There are six other ways that 2002 can be written as a sum of consecutive positive even integers. How many can you find?

c.) Can 2002 be written as a sum of consecutive odd integers?

(Answers on page 17.)

2. 2002--Final Answer?

Have each student write down any three digit number *abc*. Next using their selected number, have them enter the six digit number of the form *abcabc* into their calculator display and then perform the following sequence of arithmetic operations:

a.) divide the number by 11,
b.) square the result,
c.) divide the result by the three digit number,
d.) divide the result by 13,
e.) multiply the result by 22,
f.) divide the result by the three digit number,
g.) divide the result by 7.

Every students Final Answer is 2002. Why?

Example: With 489 as the selected three digit number:

a.) 489489 / 11 = 44499
b.) 44499 x 44499 = 1,980,161,001
c.) 1,980,161,001 / 489 = 4,049,409
d.) 4,049,409 / 13 = 311,493
e.) 311,493 x 22 = 6,852,846
f.) 6,852,846 / 489 = 14,014
g.) 14,014 / 7 = 2002.

(Answers on page 47.)